REMARKS/ARGUMENTS

Claims 1, 3 and 12 have been amended and claim 7 has been canceled without prejudice or disclaimer. Claims1-6 and 8-16 remain in the application.

Claim Objections:

Claim 3 is objected to because of the following informalities: "Second IF filter" is referenced in this claim. There is no antecedent in the claims for a second IF filter. Appropriate correction is required.

Applicants have amended claim 3 to read "second CS filter". Applicants respectfully request that the objection be withdrawn.

Claim Rejections – 35 USC § 103:

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wannasarnmaytha et al. (Two-step Kalman-filter-based AFC for direct conversion-type receiver in LEO satellite communications; Wannasarnmaytha, A; Hara, S.; Morinaga, N.; Vehicular Technology, IEEE Transactions on, Volume: 49, Issue: 1, Jan. 2000, Pages: 246 – 253).

Independent claims 1 and 12 have been amended to further clarify that which Applicants regard as their invention. No new matter has been added. Support for this amendment can be found throughout the specification, for example on page 7, line13-14. In the referenced Wannasarnmaytha system, analysis of FIG.2 reveals that the incoming signal to the first channel select filter (LPF) and the second channel select filter (Root Nyquist Filter) are analog signals as is evident from the A/D (Analog-to-Digital) conversion block after the filters (see page 248, right column, second paragraph; also page 249, left column, second paragraph). This is contrary to what is being claimed by the Applicants wherein the incoming signal to the filters is a digital signal.

Further, the Examiner interprets the Kalman filters in the Wannasarnmaytha system to provide time estimation and frame observation capabilities in rejecting steps 2 and 3 of claim 1. However, Wannasarnmaytha states that the Kalman filter is introduced as an AFC to estimate the carrier drift – frequency offset of the signal (see page 247, right

column, first paragraph). Applicants contend that these Kalman filters only provide frequency-offset estimation (as is evident from the Kalman Filter section on page 247 right column, and page 248 left column) and do not provide time estimation or frame observation capabilities.

Additionally, the Wannasarnmaytha system employs a two-step process for frequency estimation – coarse estimation before the second CS filter and fine estimation after the second CS filter as can be seen from FIG. 2 and page 248, right column, first paragraph. This is contrary to what is being claimed by the Applicants wherein the frequency estimation is performed only before the second CS filter.

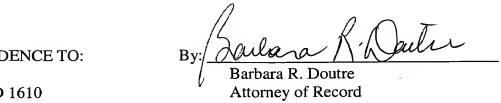
Notwithstanding the above arguments, if theWannasarnmaytha system of FIG. 2 was modified for a one-step frequency estimation (without the Fine Kalman Filter based AFC block), Wannasarnmaytha fails to teach or otherwise suggest that the limitation of step 7 of claim 1 of a fine symbol time estimator for determining symbol timing with greater precision is performed after the second CS filter.

Since the Wannasarnmaytha fail to teach or otherwise suggest all the limitations of the independent claim 1, the Applicants contend that claim 1 is allowable over the prior art of record. The arguments above are valid for independent claims 6 and 12 as well. Accordingly the rejection of claims 1, 6 and 12 is believed to be overcome. Claims 2-5, 8-11 and 13-16 are dependent claims that provide further limitations to what are believed to be allowable independent claims and as such are also in condition for an allowance.

The Applicants believe that the subject application, as amended, is in condition for allowance. Such action is earnestly solicited by the Applicants.

Please charge any fees that may be due to Deposit Account 502117, Motorola, Inc.

Respectfully submitted,

By: 

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